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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/730,158	12/05/2000	Robert A. Lieberman	99/105	6863

7590 07/21/2003

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EXAMINER

LAVARIAS, ARNEL C

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 07/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/730,158

Applicant(s)

LIEBERMAN ET AL.

Examiner

Arnel C. Lavarias

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8, 17-19, 21-23 and 25-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 17-19, 21-23 and 25-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 May 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The corrected or substitute drawings were received on 5/23/03. These drawings are acceptable.

### ***Response to Amendment***

2. The declaration under 37 CFR 1.132 filed 5/23/03 is insufficient to overcome the rejection of Claims 7-8, 19, 23, and 25 based upon lack of enablement under 35 U.S.C. 112, 1<sup>st</sup> paragraph, as set forth in the last Office action because:

The Applicants fail to show any factual evidence showing how one skilled in the art would purportedly vary one or more of the parameters (i.e. core/cladding refractive index ratio, absorption coefficient, scattering coefficient) over the length of the fiber to maintain a constant power loss per unit length over the length of the fiber. Further, the Applicants fail to disclose any factual evidence showing in what manner of variance these parameters would vary over the length of the fiber so as to maintain a constant power loss per unit length over the length of the fiber. Additionally, based on the specification of the disclosure, one skilled in the art would not be enabled to practice the claimed invention without undue experimentation and 'trial-and-error' since very little information is provided with regard to the parameters (i.e. for example, general conditions or bounds for the parameters), and the cited examples (a chemical and a pH fiber sensor) fail to describe how the fiber structure or parameters are varied and in what

manner to produce the intended result of maintaining a constant power loss per unit length. See MPEP 716.09 and 2164.

3. The Applicants argue that DiGiovanni et al. in view of Tarbox or Yunoki fails to teach or reasonably suggest the fiber having at least one parameter that varies from an input end of the fiber to an output end thereof in a manner to maintain a constant power loss per unit length over the length of the fiber. The Examiner respectfully disagrees. Both Tarbox and Yunoki teach fiber attenuators that have a constant power loss power unit length over the length of the fiber. Further, both teach that such is accomplished by careful bending of the fiber and by adjustment of the concentration of dopants (i.e. a parameter that is varied along the length of the fiber) incorporated into the fiber (See 18 in Figures 1 or 2; col. 2, line 66-col. 3, line 39 of Tarbox; col. 2, line 12-42; col. 3, lines 1-46 of Yunoki).

4. The Applicants argue that there is no purpose or motivation to combine Hamburger et al. with DiGiovanni et al., Tarbox, and Yunoki. The Examiner respectfully disagrees. Hamburger et al. is a fiber device that relies on the principles of light attenuation in an optical fiber. In particular, an increase in the attenuation coefficient occurs due to increased scattering loss in the core when the effective refractive index of the cladding changes. The effective refractive index of the cladding is more easily alterable due to the modifications made to the cladding (i.e. the surface roughening). Similarly, one skilled in the art will realize that the attenuators of DiGiovanni et al., Tarbox, and Yunoki all have attenuation coefficients that depend on the cladding of the fiber, and that the teachings of DiGiovanni et al., Tarbox, and Yunoki allow the attenuator of Hamburger et

Art Unit: 2872

al. to exhibit a uniform or constant power loss per unit length over the length of the fiber.

Additionally, the recited claims fail to cite any limitations regarding 'finding any particular point along the fiber where a sensing event has taken place' or 'spatial transients'. The Examiner notes that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

5. The Applicants argue that Hamburger et al. in view of DiGiovanni et al. in view of Tarbox or Yunoki, and further in view of Cramp et al. fail to teach or reasonably suggest the core being fabricated in a manner to be sensitive to a target material. The Examiner respectfully disagrees. Cramp et al. specifically discloses that the core of the sensor (See 22 in Figure 3) may be made porous and be treated with a dye to make it sensitive to one or more target chemicals (See for example col. 1, line 46-col. 2, line 61; col. 3, line 67-col. 4, line 39).

6. Claims 1-8, 17-19, 21-23, 25-27 are rejected as follows.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 7-8, 19, 23, and 25 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to

Art Unit: 2872

which it pertains, or with which it is most nearly connected, to make and/or use the invention.

See Sections 7-8 in Paper No. 13, dated 1/23/03.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 6, 17-18, and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over DiGiovanni et al. (U.S. Patent No. 5572618) in view of Tarbox (U.S. Patent No. 4881793) or Yunoki (U.S. Patent No. 6097874).

See Section 10 in Paper No. 13, dated 1/23/03.

11. Claims 3, 5, 21, 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamburger et al. (U.S. Patent No. 5995686) in view of DiGiovanni et al. in view of Tarbox or Yunoki.

See Section 11 in Paper No. 13, dated 1/23/03.

12. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamburger et al. in view of DiGiovanni et al. in view of Tarbox or Yunoki as applied to Claim 1 above, and further in view of Cramp et al. (U.S. Patent No. 4560248).

See Section 12 in Paper No. 13, dated 1/23/03.

***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 703-305-4007. The examiner can normally be reached on M-F 8:30 AM - 5 PM EST.

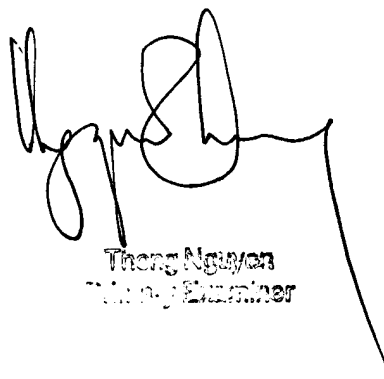
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 703-305-0024. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Art Unit: 2872

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.



Arnel C. Lavarias  
July 11, 2003



Thong Nguyen  
Training Examiner